Improperly Built Decks Can Be Dangerous

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>
> —***Don Bender**, Director, Wood Materials and Engineering Laboratory, Washington State University*

More than a million decks are built and replaced each year in the United States. While decks are a popular feature of many homes, the construction and safety of decks have become a real concern within the building industry. Improper deck building has resulted in a growing number of deck failures and related injuries and deaths.

According to Don Bender, the director of the Wood Materials and Engineering Laboratory at Washington State University, the deck is the most dangerous part of the house. Washington State Magazine's article *Making Decks Safer* reports "Decks cause more injuries and loss of life than any other part of the home structure. Except for hurricanes and tornadoes, more injuries may be connected to deck failures than all other wood building components and loading cases combined."

While decks are required to meet certain code standards and load capacities, it's estimated that of the 40 million existing decks, only half are code compliant – leaving 20 million decks that need to be rebuilt or retrofitted.

To help design and building professionals build code-compliant, safe decks, Simpson Strong-Tie® has created this *Deck Framing Connection Guide.* This guide focuses on the critical connections involved in deck construction and what the code requires for these areas. It is intended to help designers, contractors, inspectors and do-it-yourselfers ensure that their decks are properly constructed per the International Building Code® (IBC) and International Residential Code® (IRC). The guide includes a complete deck connector system that covers all the hardware needs for deck construction and references the code to ensure it meets current requirements.

Do Decks Really Need to Meet Code Requirements?

Because they look relatively simple to build, many people do not realize that decks are structures that need to be designed to adequately resist certain stresses. Like a house, or any other building, a deck must be designed to support the weight of people and objects placed on them, as well as lateral and uplift loads that can act on the deck as a result of wind or seismic activity. The 2006 versions of both the IBC and IRC contain language outlining the general design requirements of structures. This excerpt from the 2006 IRC (Section R301.1) represents a summary of the intent of both codes:

"The construction of buildings and structures in accordance with the provisions of this code shall result in a system that provides a complete load path that meets all requirements for the transfer of all loads from their point of origin through the load-resisting elements to the foundation."

The concept of a complete or continuous load path refers to a series of solid connections within the structure of a deck that transfer load through its frame to the ground or adjacent, supporting structure *(commonly a building).* This same principle is applied to the design of all types of wood frame buildings. This continuous load path is created by using a system of structural connectors and fasteners to connect the wood members together.